

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please amend claims 1, 4-7, and 10-13, and add new claims 14-16 as follows:

1. (Currently amended) A semiconductor device comprising:

a circuit substrate and a semiconductor substrate fixed with respect to said circuit substrate;

31 said semiconductor substrate including a ~~fix~~ fixed portion and a movable portion, said movable portion being movable in a predetermined direction with respect to said ~~fix~~ fixed portion, said ~~fix~~ fixed portion ~~including with~~ having electrical insulation and including:

an input electrode for inputting a periodical signal from said circuit substrate to said movable portion to vibrate said movable portion; and

an output electrode for outputting a signal indicative of capacitive variation based on vibration of said movable portion in said predetermined direction toward said circuit substrate;

an input wire for connecting said input electrode to said circuit substrate;

an output wire for connecting said output electrode to said circuit substrate; and

a shield wire connected to a constant potential at said circuit substrate to provide capacitive shielding between said input wire and said output wire; and

a pad connected to said shield wire on said fixed portion at a location other than said input electrode and said output electrode between said input electrode and said

output electrode to place said shield wire between said input wire and output wire having electrical insulation.

2. (Original) The semiconductor device as claimed in claim 1, wherein a top surface of said semiconductor substrate has a rectangular shape, and said input electrode and said output electrode are arranged at locations corresponding to different sides of said rectangular shape, respectively.

3. (Original) The semiconductor device as claimed in claim 1, wherein said shield wire is grounded at said circuit substrate.


4. (Currently amended) The semiconductor device as claimed in claim 1, wherein said shield wire is arranged ~~near~~ adjacent to either of said input electrode or said output electrode.

5. (Currently amended) The semiconductor device as claimed in claim 1, wherein said ~~fix~~ fixed portion further includes ~~with electrical insulation,~~ a dummy electrode adjacent to said output electrode and capacitively coupled to said input electrode ~~near said output electrode~~ for generating a dummy signal and

~~said semiconductor device further comprises~~ a dummy signal wire is connected to said dummy electrode and said circuit substrate, said dummy signal including an induced component of said periodical signal and being supplied to said circuit substrate to be used to cancel another component of said periodical signal induced in said periodical signal.

6. (Currently amended) The semiconductor device as claimed in claim 1, wherein said movable portion is movable in another predetermined direction with respect to said ~~fix~~ fixed portion, said semiconductor device further comprising an angular velocity detection means for detecting vibration of said movable portion in said another direction to determine an angular velocity around an axis perpendicular to said predetermined direction and another predetermined direction to generate said detection signal.

7. (Currently amended) A semiconductor device comprising:

 a circuit substrate and a semiconductor substrate fixed with respect to said circuit substrate;

said semiconductor substrate Including a ~~fix~~ fixed portion and a movable portion, said movable portion being movable in a predetermined direction with respect to said ~~fix~~ fixed portion, said ~~fix~~ fixed portion ~~including with~~ having electrical insulation and including:

an input electrode for inputting a periodical signal from said circuit substrate to said movable portion to vibrate said movable portion;

an output electrode for outputting a signal indicative of capacitive variation based on vibration of said movable portion in said predetermined direction toward said circuit substrate; and

a monitor electrode for monitoring capacitive variation based on vibration of said movable portion in said first predetermined direction and supplying a monitor signal to said circuit substrate;

an input wire for connecting said input electrode to said circuit substrate;
an output wire for connecting said output electrode to said circuit substrate; ~~and~~
a monitor wire for connecting said monitor electrode to said circuit substrate; ~~and~~
a shield wire connected to a constant potential at said circuit substrate to provide capacitive shielding between said input wire and said output wire and between said input wire and said monitor wire; and

a pad connected to said shield wire on said fixed portion at a location other than said input electrode and said output electrode between said input electrode and said output electrode to place said shield wire between said input wire and output wire and between said input wire and said monitor wire having electrical insulation.

8. (Original) The semiconductor device as claimed in claim 7, wherein said semiconductor plate is a rectangular plate, and said input electrode and said output electrode are arranged at locations corresponding to different sides of said rectangular plate, respectively.


9. (Original) The semiconductor device as claimed in claim 7, wherein said shield wire is grounded at said circuit substrate.

10. (Currently amended) The semiconductor device as claimed in claim 7, wherein said shield wire is arranged ~~near~~ adjacent to either of said input wire or said output wire.

11. (Currently amended) The semiconductor device as claimed in claim 7, wherein said shield wire is arranged ~~near~~ adjacent to either of said input wire or said monitor wire.

12. (Currently amended) The semiconductor device as claimed in claim 7, wherein

said ~~fix~~ fixed portion further includes ~~with electrical insulation,~~ a dummy electrode adjacent to said output electrode and capacitively coupled to said input electrode ~~near said output electrode~~ for generating a dummy signal, and

 ~~wherein said semiconductor device further comprises~~ a dummy signal wire is connected to said dummy electrode and said circuit substrate, said dummy signal including an induced component of said periodical signal and being supplied to said circuit substrate to be used to cancel another component of said periodical signal induced in said periodical signal.

13. (Currently amended) A semiconductor device comprising:

a circuit substrate and a semiconductor substrate fixed with respect to said circuit substrate;

said semiconductor substrate including a ~~fix~~ fixed portion, a movable portion, said ~~fix~~ fixed portion being fixed with respect to said circuit substrate and having supporting means for supporting said movable portion with movement in a predetermined direction with respect to said ~~fix~~ fixed portion, said movable portion being electrically connected to a predetermined potential;

capacitive driving means for driving said movable portion, said capacitive driving means including a drive electrode included in said ~~fix~~ fixed portion for inputting a drive

signal from said circuit substrate to said movable portion to vibrate said movable portion;

detection means for detecting capacitive variation based on vibration of said movable portion caused by supplying said drive signal to said movable portion, said detection means including a detection electrode included in said ~~fix~~ fixed portion to supply a detection signal to said circuit substrate; and

a shield wire pad arranged between said drive electrode and said ~~signal~~ detection electrode which is neighbor to said drive electrode;

a drive signal wire for connecting said drive electrode to said circuit substrate;

a detection wire for connecting said detection electrode to said circuit substrate;

and

a shield wire connected to said shield wire pad and a constant potential at said circuit substrate to provide capacitive shielding between said drive signal wire and said detection wire.

14. (New) The semiconductor device as claimed in claim 1, wherein said pad is arranged on said fixed portion to have predetermined distances to said input electrode and said output electrode to provide spatial distances for said capacitive shielding between said input wire and said output wire by said shield wire connected to said pad.

15. (New) The semiconductor device as claimed in claim 7, wherein said pad is arranged on said fixed portion to have predetermined distances to said input electrode and said output electrode to provide spatial distances for said capacitive shielding between said input wire and said output wire by said shield wire connected to said pad.

16. (New) The semiconductor device as claimed in claim 13, wherein said shield pad is arranged on said fixed portion to have predetermined distances to said drive electrode and said detection electrode to provide spatial distances for said capacitive shielding between said drive signal wire and said detection wire by said shield wire connected to said shield wire pad.

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